

U.S. Patent Application Serial No. 10/050,170  
Response dated November 24, 2003  
Reply to OA of May 30, 2003

**REMARKS**

Claims 1-5 and 7-13 are pending in this application. Claims 9 and 10 have been amended herein. New claims 11-13 have been added herein to alternatively recite the invention.

**Claims 9 and 10 are rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the enablement requirement.** (Office action paragraph no. 2)

The Examiner states that “the specification merely discloses ‘the thermal history bonding the rubber stopper to the cable’ but does not provide a detailed description to explain to one skilled in the art what is the ‘thermal history’”.

Reconsideration of the rejection is respectfully requested in view of the amendments to claims 9 and 10. Applicants submit that claim 9 and 10 were enabled before this amendment; however, the amendments to claims 9 and 10 clarify the recitation of the claims and delete the recitation regarding the “thermal history”.

Claims 9 and 10, as amended, recite that “the rubber stopper is bonded to the covering layer of the covered cable when the rubber stopper is heated by an environmental air surrounding the connector during a using state of the connector”. This recitation is provided in place of “thermal history” and is supported by the specification page 11, line 34, to page 12, line 26. More specifically, the rubber stopper according to the present invention can be used in a high temperature

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location like an engine compartment of an automobile. The environmental air temperature positively bonds the rubber stopper to the covering layer of the covered cable. This feature is not suggested in the cited references. Another aspect of claims 9 and 10 is that the rubber stopper can be bonded to the covering layer of the cable during use of the rubber stopper, which requires no bonding step in a factory.

**Claims 1, 4 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Katsuma (U.S. Patent No. 5,824,962) in view of Iversen (U.S. Patent No. 3, 816,641) (Office action paragraph no. 4).**

The rejection of claims 1, 4 and 9 is respectfully traversed and reconsideration of the rejection is respectfully requested.

Katsuma discloses a sealing rubber plug with an interposing band under the insulation barrel of a wire terminal. The Examiner has taken Katsuma's rubber plug 1 (column 2, line 61; Figs. 1-3) as the recited rubber stopper of claim 1 and has apparently taken Katsuma's sheath of wire 2 as the covered cable. Katsuma's rubber plug 1 has a wire insertion hole 4 for passing the sheathed wire 2 therethrough (column 3, lines 2-4). The Examiner has not stated, however, which element in Katsuma corresponds to the "connector housing" in claim 1; this may possibly be insulation barrel 7.

The Examiner states that "Katsuma does not specifically disclose the rubber stopper

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including a material that can bond the rubber stopper to a covering layer of the covered cable when the rubber stopper is heated.” Applicants concur with the Examiner on this point and note that, in fact, the reference does not appear to discuss the materials of the rubber plug or the sheath of wire, except for the use of the term “rubber” plug.

The Examiner then cites Iversen as disclosing a stopper 14 including a material that can bond the rubber stopper to a covering layer of a covered cable when the rubber stopper is heated. The Examiner states that it would have been obvious to apply to teaching of Iversen in the connecting structure of Katsuma.

Applicants respectfully disagree.

Katsuma clearly discusses **clamping** the rubber plug to the wire. There appears to be no disclosure of **heating** the rubber plug. In Katsuma’s design, therefore, there is no suggestion or motivation for the limitation of claim 1 with regard to bonding the rubber stopper to the covering layer of the covered cable when the stopper is heated.

Applicants note that the Examiner cites Iversen in which the tubular preform of the cable is of the same thermoplastic material as the sheath of the cable so that the preform can be heat-bonded to the cable. This is clearly a different scheme than in Katsuma, and there would appear to be no motivation to use Iversen’s preform and sheath materials in Katsuma’s device.

Moreover, Katsuma’s device calls for a “rubber” for the rubber plug, presumably because of the clamping involved. Applicants have previously noted that Iversen discloses that the preform is

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the same material as the sheath, because this is how Iversen enables bonding of the preform to the sheath. However, Iversen does not enable these materials as rubber, listing only polyethylene as a suitable flexible thermoplastic. Therefore, even if Iversen's material was substituted into Katsuma's rubber plug and sheath, there still would not be enablement in the reference for this to be a rubber, as is required by claim 1.

To summarize, the limitation of claim 1 that "the rubber stopper includes a material that can bond the rubber stopper to a covering layer of the covered cable when the rubber stopper is heated" is not disclosed in either Katsuma or Iversen, and Applicants submit that there is no suggestion in the combination of references for this limitation.

**Claims 2 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Katsuma in view of Iversen as applied to claim 1, and further in view of Wada (Office action paragraph no. 5).**

The rejection of claims 2 and 5 is respectfully traversed, and reconsideration of the rejection is respectfully requested.

In traversing the rejection, Applicants note their remarks above in regard to the rejection of claims 1, 4 and 9, arguing that the combination of Katsuma and Iversen fails to provide a *prima facie* case of obviousness for claim 1. There would appear to be no motivation for any combination of Katsuma and Iversen, since Katsuma's rubber stopper is clamped, while Iversen's preform is bonded

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to the sheath.

Moreover, Applicants argue that there is no suggestion or motivation in either reference to use the rubber composition of Wada. The Examiner cites use of the rubber composition of Wada for Katsuma's rubber plug 1 "because the rubber composition taught by Wada has an excellent non-tackiness such that it can be easily [handling] during the connection process." However, Katsuma does not appear to discuss tackiness of the rubber plug. In fact, the characteristics of the rubber of Katsuma's rubber plug do not appear to be discussed in the reference.

Moreover, Applicants note that the present rejection is based on both the rubber plug and the sheath in Katsuma being made of Wada's rubber, such that these could be bonded together by heat. However, as Applicants have previously argued, there is no suggestion in Wada that a plug of Wada's rubber could be bonded to a sheath of Wada's rubber by heat. In fact, it is unclear that there is a reasonable expectation of success for having a sheath made of Wada's rubber.

Applicants therefore argue that the limitation of claim 5 that "the rubber stopper includes a plasticizer soluble mutually with a resin material constituting a covering layer of the covered cable" is not found in any of the references, and there is no suggestion for this limitation in the combination of references.

**Claims 3, 7, 8 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Katsuma in view of Iversen as applied to claim 1, and further in view of Yoshino (Office action**

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**paragraph no. 6).**

The rejection of claims 3, 7, 8 and 10 is respectfully traversed and reconsideration of the rejection is respectfully requested.

The Examiner states in the rejection that it would have been obvious to use the rubber composition of Yoshino for the stopper of Katsuma.

In traversing the rejection, Applicants note, as argued above, that a *prima facie* case of obviousness cannot be made for claim 1 over Katsuma and Iversen.

Moreover, Applicants submit that there is no suggestion or motivation in either reference to substitute the rubber composition of Yoshino. The Examiner gives as motivation for the combination that "the rubber composition of Yoshino is improved in hardness, modulus and tear strength." However, Katsuma does not appear to disclose these as requirements for the rubber plug or the sheath. As noted above, the characteristics of the rubber of Katsuma's rubber plug do not appear to be discussed in the reference.

In addition, as with Wada's rubber, there is no suggestion in Yoshino that a plug of Yoshino's rubber could be bonded to a sheath of Yoshino's rubber by heat. In fact, there does not appear to be a reasonable expectation of success for Iversen's device having a sheath made of Yoshino's rubber.

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**Regarding new claims 11 to 13.**

Claims 11 to 13 recite that the covering layer of the covered cable includes a vinyl chloride resin or a polyvinyl chloride resin, which is supported by the original specification page 5, lines 14 to 17. Thus, the covered cable is different in composition from the rubber stopper. However, Iversen (U.S. Patent No. 3,816,641) discloses that the covering layer of a cable is made of the same material as an associated stopper to the covering layer of the cable.

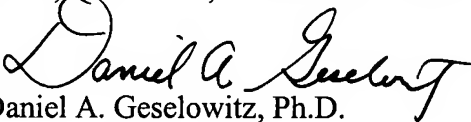
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If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact Applicant's undersigned agent at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

In the event that this paper is not timely filed, Applicant respectfully petitions for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

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